

REMARKS

Claims 1-10 are pending in the above-identified application. Support for new claims 5-10 is found at paragraphs [0025] and [0026] on pages 13-14 of the present specification.

Issues Under 35 U.S.C. 103(a)

Claims 1-4 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Tsunoda '308 (US 2002/0042308 A1) in view of Ohsumi '531 (USP 5,772,531).

The above rejection is traversed for the following reasons.

Present Invention and Its Advantages

The present invention is directed to a golf ball which includes the following features:

[i] a multi-piece solid golf ball comprising a core consisting of an inner core, an intermediate layer formed on the inner core and an outer layer formed on the intermediate layer, and a cover covering the core, wherein

[ii] the inner core has a flexural rigidity of 20 to 80 MPa,

[iii] a ratio ( $R_M/R_I$ ) of a flexural rigidity of 20 to 80 MPa,

[iv] a flexural rigidity of the outer layer is higher than that of the inner core by 70 to 500 MPa, and

[v] assuming that a radius of the golf ball is represented by  $r_G$ , a radius of the inner core is represented by  $r_I$  and a radius of a two-layer structured core obtained by forming the intermediate layer on the inner core is represented by  $r_T$ , the intermediate layer is placed such that the  $r_G$ ,  $r_I$  and  $r_T$  satisfy the following two formulae:

$$r_I/r_G \geq 0.70$$

$$r_T/r_G \leq 0.83.$$

When the above-noted features are employed, advantageous properties result as evidenced by the comparative test results summarized in Tables 1-7 of the present specification. Note that, for example, Tables 6 and 7 at pages 32-33 of the specification show that Example Nos. 1-5 (present invention) exhibit advantageous combinations of launch angle, spin, carry and shot feel properties when compared to Comparative Example Nos. 1-4, wherein Comparative Example Nos. 1-4 employ golf balls which fail to satisfy the flexural rigidity ratio ( $R_M/R_I$ ) properties or radius ratio properties as explained in paragraphs [0063] - [0065] on pages 33-34 of the specification.

#### Distinctions Between Present Invention and Tsunoda '308

Tsunoda '308 discloses a golf ball which includes a core **3** and a cover **5**, wherein the core **3** includes a first layer **7**, second

layer **9**, third layer **11**, fourth layer **13**, fifth layer **15**, and a sixth layer **17** as shown in Figure 1. Tsunoda '308 discloses at paragraphs [0036] - [0037] that unless the six-layer structure is employed which includes both the diameter and modulus of elasticity properties in Table I, the desired value "(T1/T2)" cannot be obtained within the desired range of 2.10 - 2.50. That is, unless six layers are used having the described diameters, the back spin rate properties of the golf ball deteriorate resulting in poor spin rate, launch angle and hit feeling properties as evidenced by the comparative test results in Table II at page 5 thereof.

Tsunoda '308 fails to disclose or suggest a golf ball having less than six layers as in the present invention. In fact, an attempt to modify the golf ball of Tsunoda '308 by reducing the number of layers from six to three would, according to the disclosure of Tsunoda '308, result in deteriorated properties so as to fail to satisfy the intended purpose of the golf ball described in Tsunoda '308. In this regard, note that a proposed modification of a prior art design cannot render the design unsatisfactory for its intended purpose. *In re Gordon*; 221 USPQ 1125 (Fed. Cir. 1994); MPEP 2143.01, Rev. 2, May 2004, page 2100-131.

Moreover, the golf ball of the present invention satisfies the following two formulae:

$$r_I/r_G \geq 0.70$$

$$r_T/r_G \leq 0.83$$

wherein  $r_I$  is a radius of the inner core,  $r_T$  is a radius of a two-layer structured core (the inner core + the intermediate layer), and  $r_G$  is a radius of the golf ball (feature [v]). It means that the intermediate layer is located at the position in the golf ball such that the distance from the center point is within the range of 70 to 83% of the radius of the golf ball.

The Examiner states that, in the golf ball of Tsunoda '308, the first layer is equivalent to the inner core of the present invention and the second layer is equivalent to the intermediate layer of the present invention. Therefore, the  $r_I$  is a radius of the first layer, and the  $r_T$  is a radius of the two-layer core (the first layer + the second layer). Paragraph [0037] of Tsunoda '308 discloses that the first layer has a diameter of 5 to 10 mm (the radius  $r_I$  of 2.5 to 5 mm) and the second layer has a thickness of 1.0 to 3.0 mm (the radius  $r_T$  of the two layer core of 3.5 to 8 mm). Since the radius of the golf ball is not described in Tsunoda '308, it can be calculated from the diameter of the golf ball in the Examples, which is 42.8 mm. That is, the radius  $r_G$  of the golf ball of Tsunoda '308 is 21.4 mm. When the values of  $(r_I/r_G)$  and  $(r_T/r_G)$  are determined by calculation, the results are as follows:

$$r_I/r_G: 0.117 \text{ to } 0.234$$

$$r_T/r_G: 0.164 \text{ to } 0.374.$$

Therefore, the second layer is located at the position in the golf ball of Tsunoda '308 such that the distance from the center point is within the range of 11.7 to 37.4% of the radius of the golf ball. On the other hand, the intermediate layer is located at the position in the golf ball of the present invention such that the distance from the center point is within the range of 70 to 83% of the radius of the golf ball, which is outside the range of Tsunoda '308. Therefore, Tsunoda '308 fails to disclose or suggest feature [v].

In view of the above, significant patentable distinctions exist between the present invention and Tsunoda '308. In addition, even assuming that Tsunoda '308 supports a properly alleged prima facie obviousness argument, such an argument is rebutted by the comparative test results disclosed in the present specification as discussed above which establish unexpected, advantageous properties exhibited by the unique combination of elements employed in the present invention. Consequently, Tsunoda '308 fails to support the above-noted rejection.

#### Distinctions Between Present Invention and Ohsumi '531

Ohsumi '531 discloses a golf ball having an inter layer **1a** of a diameter of about 6-30 mm, an intermediate layer **1b** of a thickness of 1-13 mm, and an outer layer **1c** as shown in Figure 1.

Ohsumi '531 fails to disclose or suggest any of the flexural rigidity features [ii] - [iv] of the present invention. Thus, Ohsumi '531 clearly fails to recognize the advantages achieved by the present invention as evidenced by the comparative test results described in the present specification and discussed above which show that flexural rigidity properties outside the ranges of the present invention result in disadvantageously, inferior golf ball performance properties. Consequently, significant patentable distinctions exist between the present invention and Ohsumi '531 such that this basis for the above-noted rejection should be withdrawn.

Inconsistent Features Prevent Combination of Tsunoda '308 and Ohsumi '531

Significant inconsistent features exist between the designs described in Tsunoda '308 and Ohsumi '531 which prevents these documents from being combined together as asserted in the Office Action. First, Tsunoda '308 clearly requires a six-layer structure wherein each of the layers have specific diameters or thicknesses and other properties in order to achieve the correct T1/T2 value as discussed at paragraphs [0036] - [0037] in Tsunoda '308. Thus, this requirement for a six-layer structure of Tsunoda '308 cannot be transformed into a three-layer structure as described in Ohsumi

'531 without removing several essential design elements required by Tsunoda '308. Second, Ohsumi '531 clearly discloses a structure having a core **1** with an inner layer **1a**, intermediate layer **1b** and an outer layer **1c** in contrast to the six-layer structure of Tsunoda '308. An attempt to increase the number of layers in the golf ball design of Ohsumi '531 from three to six would clearly be inconsistent with the design parameters described in Ohsumi '531. The Office Action has failed to resolve these very significant inconsistent design features between Tsunoda '308 and Ohsumi '531, such that these documents cannot be combined together as asserted. In addition to the above, both Tsunoda '308 and Ohsumi '531 fail to disclose or recognize anywhere the unexpected, advantageous properties achieved by employing appropriate flexural rigidity properties and radius ratios as in the golf ball of the present invention as evidenced by the comparative test results discussed above. Consequently, significant patentable distinctions exist between the present invention and each of these documents, whether taken separately or improperly combined.

#### Conclusion

It is submitted for the reasons stated above that the present claims define patentable subject matter such that this application should now be placed condition for allowance.

Appl. No. 10/691,616

If any questions arise regarding the above matters, please contact Applicant's representative, Andrew D. Meikle (Reg. No. 32,868), in the Washington Metropolitan Area at the phone number listed below.

Pursuant to the provisions of 37 C.F.R. §§ 1.17 and 1.136(a), the Applicants hereby petition for an extension of one (1) month to Saturday, November 20, 2004, in which to file a reply to the Office Action. The required fee of \$110.00 is enclosed herewith.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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